

# Tingjun Yang

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## Personal Information

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## Education

**Stanford University**, Stanford, CA, USA  
Department of Physics 09/2002 - 04/2009  
Ph.D., Physics, April, 2009

- Dissertation Title: A Study of Muon Neutrino to Electron Neutrino Oscillations in the MINOS Experiment
- Advisor: Prof. Stanley G. Wojcicki

**University of Science and Technology of China (USTC)**, Hefei, Anhui, China  
Department of Modern Physics 09/1997 - 06/2002  
B.S., Physics, June, 2002

## Honors and Awards

URA Thesis Award, 2010  
APS Mitsuyoshi Tanaka Dissertation Award in Experimental Particle Physics, 2010  
Vincent and Lily Woo Fellowship, Stanford University, 2007  
Baosteel Scholarship, USTC, 2001  
Guanghua Scholarship, USTC, 2000  
Outstanding Student Scholarship (First Class), USTC, 1999  
RSD-Sanyo Scholarship, USTC, 1998  
Outstanding Freshman Scholarship, USTC, 1997

## Research Experience

**Research Associate at Fermilab** 2009 - now

*ArgoNeuT (Argon Neutrino Teststand)*

- Led several cross section measurements: CC inclusive cross sections and coherent pion production cross sections.
- Served as convener of the charged-current (CC) analysis group.

*LAPD (Liquid Argon Purity Demonstrator)*

- Led the effort to improve purity monitors.

- Served as coordinator of the LongBo project (a TPC with a 2 m drift distance).

#### *MicroBooNE*

- Serving as coconvener of reconstruction group.

#### *CDF (Collider Detector at Fermilab)*

- Worked on searches for extra dimensions and measurements of QCD cross sections.
- Served as level-3 trigger on-call expert.

**Graduate Research Assistant at Stanford University** working on MINOS (Main Injector Neutrino Oscillation Search) 2002 - 2009

$\nu_\mu \rightarrow \nu_e$  *Appearance Analysis* (Thesis Work)

### Teaching Experience

**Mentoring undergraduate and graduate students**, Fermilab, IL, USA  
2010 - now

Mentored two undergraduate students and two graduate students on researches at CDF and ArgoNeuT.

**Instructor in CDF new shifters' training**, 2009 - 2011  
Gave lectures on the CDF level-3 trigger system in CDF new shifters' training once every 3 months.

**Tour guide for high school students**, 2009 - now  
Gave tours to high school students in Fermilab's Saturday Morning Physics program.

**Teaching Assistant**, Stanford University, CA, USA 2003 - 2004  
Duties at various times have included office hours and leading weekly physics lab exercises.

### Selected Publications

#### **Primary Author**

- M. Adamowski *et al.*, "Liquid Argon Purity Demonstrator", in preparation
- C. Anderson *et al.* (ArgoNeuT Collaboration), "Measurements of Inclusive Muon Neutrino and Anti-neutrino Charged Current Differential Cross Sections on Argon in the NuMI Anti-neutrino Beam", in preparation
- T. Aaltonen *et al.* (CDF Collaboration), "Measurement of the Cross Section for Direct-Photon Production in Association with a Heavy Quark in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.96$  TeV," Phys. Rev. Lett. **111**, 042003 (2013)
- **T. Yang**, "Search for  $\nu_\mu \rightarrow \nu_e$  Oscillations in the MINOS Experiment,"

International Journal of Modern Physics A, **26**, 179 (2011)

- T. Aaltonen *et al.* (CDF Collaboration), “Search for Randall-Sundrum Gravitons in the Diphoton Channel at CDF,” Phys. Rev. D **83**, 011102 (2011)
- P. Adamson *et al.* (MINOS Collaboration), “Search for muon-neutrino to electron-neutrino transitions in MINOS,” Phys. Rev. Lett. **103**, 261802 (2009)
- T. Yang *et al.*, “A Hadronization Model for Few-GeV Neutrino Interactions,” Eur. Phys. J. C **63**, 1 (2009)
- T. Yang *et al.*, “A Hadronization Model for the MINOS Experiment,” AIP Conf. Proc. **967**, 269 (2007)
- T. Yang and J. Chen, “The effects of the Lorentz force on harmonic generation during a laser interaction with a solid target in the nonrelativistic regime,” J. Phys. B. **35**, 4759 (2002)

### Major Contributions to Analysis

- C. Anderson *et al.* (ArgoNeuT Collaboration), “First Measurements of Inclusive Muon Neutrino Charged Current Differential Cross Sections on Argon,” Phys. Rev. Lett. **108**, 161802 (2012)
- T. Aaltonen *et al.* (CDF Collaboration), “Search for New Dielectron Resonances and Randall-Sundrum Gravitons at the Collider Detector at Fermilab,” Phys. Rev. Lett. **107**, 051801 (2011)
- P. Adamson *et al.* (MINOS Collaboration), “New constraints on muon-neutrino to electron-neutrino transitions in MINOS,” Phys. Rev. D **82**, 051102 (2010)
- C. Andreopoulos *et al.*, “The GENIE Neutrino Monte Carlo Generator,” Nucl. Instrum. Meth. A **614**, 87 (2010)

### Conference Presentations and Public Talks

- **Liquid Argon Time Projection Chambers**  
Intensity Frontier Seminar, Fermilab, September 26, 2013
- **Probing Neutrino-Nucleus Interactions: New Results from ArgoNeuT**  
NUFACT 2013 - International Workshop on Neutrino Factories, Super Beams and Beta Beams, Beijing, China, August 20, 2013
- **Direct photon results from CDF**  
LHCP 2013 - First Large Hadron Collider Physics Conference, Barcelona, Spain, May 14, 2013
- **New Photon Results from CDF**  
Joint Experimental-Theoretical Seminar, Fermilab, March 1, 2013
- **Neutrino interactions on liquid argon: new results from ArgoNeuT**  
Aspen Winter Workshop - New Directions in Neutrino Physics, Aspen, CO, February 8, 2013
- **The LongBo Project in the Liquid Argon Purity Demonstrator**

(poster)

NNN 2012, Fermilab, October 4, 2012

- **Data Analysis in High Energy Physics**  
Colloquium at Department of Physics and Astronomy, University of Iowa, November 7, 2011
- **Measurement of  $\gamma + b/c + X$  Production Cross Sections at CDF**  
2011 DPF Meeting, Brown University, August 11, 2011
- **Liquid Argon Purity Demonstrator (poster)**  
Workshop on Detector R&D, Fermilab, October 7-9, 2010
- **URA Thesis Award Talk - Search for  $\nu_\mu$  to  $\nu_e$  Oscillations in MINOS**  
2010 Fermilab Users' Meeting, Fermilab, June 2, 2010
- **Search for Randall-Sundrum Gravitons at CDF**  
PHENO 2010 SYMPOSIUM, University of Wisconsin - Madison, May 10, 2010
- **Mitsuyoshi Tanaka Dissertation Award in Experimental Particle Physics Talk - Measuring  $\theta_{13}$  in MINOS**  
2010 APS "April" meeting, Washington, DC, February 16, 2010
- **New Results from MINOS**  
CIPANP 2009, San Diego, California, May, 2009
- **Recent Results from MINOS**  
SLAC Summer Institute 2008, SLAC, August 12, 2008
- **Electron Neutrino Identification in the MINOS Detectors**  
2008 APS April Meeting and HEDP/HEDLA Meeting, St. Louis, Missouri, April 14, 2008
- **Hadronization Model for MINOS**  
NuInt07, Fifth International Workshop on Neutrino-Nucleus Interactions in the Few-GeV Region, Fermilab, June 3, 2007
- **$\nu_\mu \rightarrow \nu_e$  Oscillation Study in MINOS**  
2006 APS April Meeting, Dallas, TX, April 22, 2006
- **MC Studies of  $\nu_\mu \rightarrow \nu_e$  Oscillation in MINOS**  
New Perspectives 2005, Fermilab, June 10, 2005

## Professional Experience

- **Snowmass on the Mississippi a.k.a CSS 2013**, Minneapolis, MN, USA, 7/29 - 8/6 2013
- **Fifth CERN-Fermilab Hadron Collider Physics Summer School**, Fermilab, IL, USA, August 16-27, 2010
- **Workshop on multivariate techniques for separating signal and background**, California Institute of Technology, CA, USA, February 11, 2008
- **GENIE Hadronization Model Improvement/Tuning mini-workshop**, Tufts University, Boston, MA, USA, July 12-21, 2006

## Computer Skills

- Languages: Proficient in **C++**, **C** and **Fortran**, familiar with **Perl** and Unix shell scripts.
- Applications: Extensive use of **ROOT**, fundamental knowledge on **GEANT3** and **FLUKA**, some experience with **MySQL**.
- Algorithms: Artificial neural network.